IN THE U.S. PATENT AND TRADEMARK OFFICE

In re Application of:	§	BEFORE THE EXAMINER:
Robert A. Migliorini	§	Kevin R. Kruer
Serial No.: 09/747,537	§	Group Art Unit No.: 1774, Confirmation No. 2084
Filed: December 22, 2000	§	Attorney Docket No.: 10212/2
Title: Multi-Layer Oriented Polypropylene Films with Modified Core	§	January 12, 2004

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF ROBERT A. MIGLIORINI UNDER 37 C.F.R. § 1.132

Sir:

I, Robert A. Migliorini, do hereby declare and state:

1. I am a co-inventor of the subject matter set forth in the above-referenced application.

2. I have worked in the Films Division of ExxonMobil Chemical Corporation (formerly Mobil Oil Corporation) for more than sixteen (16) years and have held a variety of positions in the research, development and manufacturing groups. Over the past three (4) years, I have worked in the manufacturing group and my current title is Plant Manager. I have extensive knowledge in the development and manufacture of thermoplastic films and the polymeric materials that are used to form such films. I have a Bachelor's degree in Chemical Engineering from Tufts University, and both a Master's degree in Materials Engineering and a MBA from Rochester Institute of Technology. I have 16 years of experience in thermoplastic film technology, and have also taken a number of courses relating to thermoplastic film technology.

3. I am thoroughly familiar with the subject matter disclosed and claimed in the above-referenced patent application.

4. Based upon information and believe, polymeric biaxially oriented films have been produced by coextruding multiple layers of polymeric materials for at least 25 years.

5. As disclosed in U.S. Patent 5,108,844, biaxially oriented polymeric film structures with adjacent coextruded layers that are produced from different categories of polymeric materials, such as polyolefins, vinylidene chloride copolymers, polyesters, polyamides, and polycarbonates, often exhibit low adhesion between the adjacent layers of categorically different materials and the layers may delaminate upon exposure to certain conditions during use, processing, and storage such as slitting, metallizing, printing, laminating and packaging processes. These categorically different materials are incompatible with one another which results in poor adhesion between the layers in coextruded film structures.

6. My experience indicates that adjacent layers of biaxially oriented coextruded polymeric films produced from the same category of polymeric materials, such as polyolefin-based materials, do not exhibit low adhesion and the accompanying problems associated with adjacent layers of categorically different materials, described above. Representative polyolefins that do not exhibit adhesion problems between one another as layers in coextruded film structures include PP homopolymer, EP copolymer, EPB terpolymer, PB copolymer, HDPE, LLPE, LDPE, and MDPE. These polyolefins are highly compatible with each other, which results in outstanding interlayer adhesion in coextruded film structures.

7. My general experience is that adhesion between adjacent polymeric layers produced from the same category of materials, in a coextruded biaxially oriented polymeric film, is so great that the strength of the adhesion between the adjacent layers cannot be measured. The reason is that the film itself will tear before one can initiate the onset of delamination between the layers in a coextruded film structure comprising polyolefin based polymers.

8. During biaxial orientation of coextruded polymeric films in commercial processes, film extrudates are routinely stretched first in the machine direction ("MD") followed by orientation in the transverse direction ("TD"). The MD first and TD second orientation sequence predominates in commercial polyolefin film processes. However, in some processes, the transverse orientation precedes the machine direction orientation. It is also known to simultaneously orient films in both the machine and transverse directions.

9. Regardless of the type of biaxial orientation process, biaxially oriented polymeric films incorporating polypropylene, including isotactic polypropylene, based core layers are routinely oriented in commercial processes once in the machine direction and once in the transverse direction without problems of tearing or breaking the coextruded biaxially oriented films during the stretching processes. Therefore, it is unnecessary to modify the core layers of such films to prevent tearing or breaking of these commercial films during orientation processes.

10. Oriented polymeric films are also produced in processes incorporating a secondary machine direction orientation step. This type of process is disclosed in the U.S. Patent 5,691,043 to Keller et al. In secondary orientation processes, polymeric film extrudates are typically oriented first in the machine direction, followed by orientation in the transverse direction. Subsequently, the oriented film is oriented a second time in the machine direction.

11. During the secondary machine direction orientation process, the film is subjected to a high degree of stress because of its oriented state following transverse direction orientation. This high stress creates a greater propensity for the the film to tear and break during the second machine direction orientation step. The high degree of stress results from the fact that the film has already been oriented in both the machine and transverse directions before the second orientation in the machine direction. The first machine direction orientation and the transverse orientation leave the film in a strained state and any subsequent orientation results in a higher likelihood that the film will tear.

12. The stresses generated in the secondary machine direction orientation process as disclosed in U.S. Patent 5,691,043 produce uniaxial shrinkable oriented polypropylene films with greater stresses than the stresses generated in a biaxial orientation process having the same cumulative degree of orientation produced in a traditional MD followed by TD stretching process with no secondary MD stretching process. For example, a coextruded film that is orientated first in the machine direction 4 times followed by orientation in the transverse direction 8 times and then oriented 1.25 times in the machine direction in a secondary orientation step will be more highly strained than the same coextruded film that is oriented 5 times in the machine direction followed by orientation 8 times in the transverse direction. In the secondary machine direction orientation example, the cumulative MD stretch is determined by multiplying the degree of the first MD stretch by the degree of the second MD stretch (4 x 1.25 = 5). The overall degree of stretching of the film is determined by multiplying all of the degrees of stretching, (4 x 8 x 1.25 = 40) and (5 x 8 = 40), in the respective examples.

13. I declare that all statements made herein are of my own knowledge are true and that all statements made on information and belief are believed to be true, that these statements are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful statements may jeopardize the validity of the above-referenced patent application and any patent issued thereon.

Dated: 1/20/04

Robert A. Migliorini

Robert A. Migliorini

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